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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XA969

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Abalone Research on San Nicolas Island, California

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS has received an application from Dr. Glenn R. VanBlaricom (VanBlaricom) for an Incidental Harassment Authorization (IHA) to take marine mammals, by harassment, incidental to abalone research surveys. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an IHA to VanBlaricom to take, by Level B Harassment only, three species of marine mammals during the specified activity.

DATES: Comments and information must be received no later than [insert date 30 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: Comments on the application should be addressed to Michael Payne, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The mailbox address for providing email comments is [ITP.Laws@noaa.gov](mailto:ITP.Laws@noaa.gov). NMFS is not responsible for e-mail comments sent to addresses other than the one provided here. Comments sent via e-mail, including all attachments, must not exceed a 10-megabyte file size.

Instructions: All comments received are a part of the public record and will generally be posted to <http://www.nmfs.noaa.gov/pr/permits/incidental.htm> without change. All Personal Identifying Information (e.g., name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

An electronic copy of the application containing a list of the references used in this document may be obtained by writing to the address specified above, telephoning the contact listed below (see FOR FURTHER INFORMATION CONTACT), or visiting the internet at: <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Ben Laws, Office of Protected Resources, NMFS, (301) 427-8401.

#### SUPPLEMENTARY INFORMATION:

##### Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the

permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization. Except with respect to certain activities not pertinent here, the MMPA defines "harassment" as: "any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment]."

#### Summary of Request

On October 26, 2011, NMFS received a complete application from VanBlaricom for the taking, by Level B harassment only, of marine mammals incidental to black abalone (Haliotis cracherodii) research surveys. The first of five IHAs for the specified activities was issued to VanBlaricom on September 23, 2003 (68 FR 57427; October 3, 2003); the most recent of these was issued on January 18, 2008 (73 FR 4841; January 28, 2008), expiring January 17, 2009. The proposed IHA would be valid for 1 year from the date of issuance.

The proposed IHA would authorize small numbers of Level B harassment takes of California sea lions (Zalophus californianus), harbor seals (Phoca vitulina), and northern elephant seals (Mirounga angustirostris) incidental to research surveys performed for the purpose of assessing trends in black abalone populations over time in permanent study sites, and to conduct related research on the biology and ecology of black abalones relevant to current conservation concerns for the species, at San Nicolas Island (SNI), Ventura County, California. The specified activity consists of researchers, on foot, counting black abalones in plots along established transect lines at each of nine sites. Visits are generally made to each site on SNI up to four times per year in order to complete standardized annual black abalone surveys. In addition, VanBlaricom plans to conduct additional studies of growth and mortality rates, as well as genetic studies, necessitating as many as five visits per year.

#### Description of the Specified Activity

Long-term study of abalone population trends began in 1979 due to interest in relocation of southern sea otters (Enhydra lutris nereis) to SNI. Following two seasons of reconnaissance surveys (1979-80), quantitative survey effort started in 1981, when nine permanent research sites in rocky intertidal habitats were chosen based on the presence of relatively dense abalone aggregations in order to monitor changes over time. From September 1979 through October 2011, VanBlaricom has made 137 separate field trips to SNI, with a total of 723 days of survey work.

Study of abalone population trends on SNI began in advance of the reintroduction of sea otters to SNI by the U.S. Fish and Wildlife Service (USFWS), which operated the relocation program from 1987-91. Because abalones are often significant prey for sea otters, it was considered important to monitor abalone population trends in advance of and during the

relocation program. In 1992, the appearance of a novel exotic disease at SNI (abalone withering syndrome) resulted in dramatically increased rates of abalone mortality and a continued emphasis on understanding population trends. In addition, the possibility for conflict over conservation priorities (i.e., otters and abalone) has grown as sea otter populations in southern California waters have expanded in recent years, increasing the probability of natural dispersal of sea otters from mainland California to SNI. The southern sea otter was listed as threatened under the Endangered Species Act (ESA) in 1977, although translocated populations, such as those animals moved to SNI under USFWS's now-discontinued program, are considered non-essential experimental populations. The black abalone was listed as an endangered species under the ESA on January 14, 2009. There is concern that the effects of abalone withering syndrome, following on several decades during which black abalones may have been over-harvested in commercial and recreational fisheries and subject to illegal removals, may continue to constrain black abalone populations to low densities and a high consequent risk of extinction. The long-term abalone population trend data from SNI will contribute significantly to determining whether population depletion persists, and if extinction risk remains high.

Marine mammal populations at SNI (especially California sea lions and elephant seals) have grown substantially, and with expanded distributions, at SNI since the beginning of abalone research in 1979. Thus, sites previously accessible to researchers with no risk of marine mammal interaction are now being utilized by marine mammals at levels such that approach without harassment is no longer possible. During the 2002 survey year, VanBlaricom determined that marine mammal numbers were such that survey work could not be conducted at five of the nine sites without the possibility of incidental harassment of hauled-out pinnipeds. Subsequently, significant numbers of California sea lions were seen for the first time at two additional study

sites. Thus, of the nine study sites used for the abalone surveys, only two may currently be approached without the possibility of disturbing at least one species of pinniped.

Animals likely to be affected by abalone research activity are those that are hauled out on land near study sites. Past experience has shown that those animals disturbed by researchers may flush into the water, or move some distance away from the researchers without flushing into the water. Variable numbers of California sea lions, harbor seals, and elephant seals typically haul out near six of the nine study sites, and rarely near a seventh. Breeding activity of the three relatively common pinniped species occurs at five of the nine sites. Periods of breeding and lactation for California sea lions and harbor seals occur from approximately February 15 through October 15, while elephant seal pups are born, nursed, and weaned from approximately January through March, with pups departing for foraging areas at sea at about 30 days post-weaning.

Abalone research at SNI is conducted primarily by VanBlaricom and associates from the Washington Cooperative Fish and Wildlife Research Unit (a component of the Cooperative Research Units Program, U.S. Geological Survey) and the University of Washington. The U.S. Navy owns SNI and provides logistical support and cooperation for all research work done there, with additional logistical support provided by the University of California, Santa Cruz. Funding for black abalone research work at SNI is currently provided by the U.S. Geological Survey; the National Marine Fisheries Service; the California Sea Grant College Program; the University of Washington; and the U.S. Navy.

Research is conducted by counting black abalone in plots of 1 m<sup>2</sup> (3.3 ft<sup>2</sup>) along permanent transect lines in rocky intertidal habitats at each of the nine study sites (see Figure 1 of VanBlaricom's application for a map of the study sites). Permanent transect lines are demarcated by stainless steel eye-bolts embedded in the rock substrate and secured with marine

epoxy compound. Lines are placed temporarily between bolts during surveys and are removed once surveys are completed. Survey work is typically done by two field biologists working on foot (sites are accessed by hiking to the shoreline from a vehicle parked inland), and is conducted only at low tide. Variation in surf height and sea conditions can influence the safety of field biologists as well as the quality of data collected, so specific timing of site visits is difficult to predict, although work is typically conducted between October and February. All work is done during daylight hours. Additional methodological detail is available in VanBlaricom, 1993 and VanBlaricom et al., 1993.

In recent years, teams responsible for status review and recovery planning for black abalone determined that there is a need for additional research. Identified priorities include study of growth and mortality rates of young black abalones (accomplished through tagging studies) and development of new research on the genetic relatedness of adult abalones and recently observed juvenile abalones at three of the nine study sites at SNI. VanBlaricom is currently developing detailed study plans for subject genetic studies, and is collaborating with NMFS scientists on tagging studies to understand growth and mortality rates. These additional studies require field effort beyond that necessary for the established population surveys. Annual black abalone surveys typically require that each of the nine permanent sites be visited between one and three times per year. As a result of the additional studies planned for SNI, one site would be visited five times per year, and two additional sites would be visited four times. Each visit to a given study site generally takes no more than 4 hours, after which the site is vacated and can be re-occupied by any marine mammals that were disturbed by the presence of researchers. One annual visit to each site is typically for maintenance purposes, is conducted in a month when pinnipeds are absent or are present in reduced numbers, and takes approximately 30 minutes.

## Region of Activity

SNI, approximately nine miles (14.5 km) long and four miles (6.4 km) wide, lies in the Santa Barbara Channel, more than 60 mi (96.6 km) offshore. One of the smallest of the eight Channel Islands, SNI is the farthest island from the mainland, and is typically reached only after a 7-8 hour ride via chartered vessel. The island has a relatively flat plateau on the interior, with a very steep cliff face dropping to the ocean on the south side and a more gradual slope on the north. Elevations of the southern cliff faces average 500 ft (152 m) with a maximum island elevation of 907 ft (276 m). The beaches are mainly loose sand with large semi-transient sand dunes on the western tip of the island. A large low sand spit extends out from the eastern beach. The interior of the island is a highly eroded rolling mesa with many rills and gullies. Swells, surge, and limited visibility are expected as general conditions at SNI, which is property of the U.S. Navy and is off-limits to civilians without specific permission.

## Description of Marine Mammals in the Area of the Specified Activity

Many of the beaches in the Channel Islands provide resting, molting or breeding places for pinnipeds. On SNI, three pinniped species (northern elephant seal, harbor seal, and California sea lion) can be expected to occur on land in the vicinity of abalone research sites either regularly or in large numbers during certain times of the year. In addition to the three species commonly encountered at SNI, Guadalupe fur seals (Arctocephalus townsendi), listed as threatened under the ESA, and sea otters are known to occur. A single adult male Guadalupe fur seal was seen at one abalone research site on two occasions during the summer months in the mid-1980s. However, none have been seen since that time. Due to the rarity of Guadalupe fur seal sightings during abalone research at SNI, and because of mitigation measures described later in this document (see Proposed Mitigation section of this document), no take of Guadalupe fur



seals is anticipated or proposed for authorization. As such, the species is not discussed further. While sea otters are not typically sighted during the abalone survey work, a 2011 population survey indicated that sea otters at SNI number approximately 50 individuals. However, sea otters are under the jurisdiction of the USFWS and are not discussed further here.

Further information on the biology and distribution of these species and others in the region can be found in NMFS' Marine Mammal Stock Assessment Reports, which are available online at [http://www.nmfs.noaa.gov/pr/sars/.California Sea Lion](http://www.nmfs.noaa.gov/pr/sars/.California%20Sea%20Lion)

Species Description – California sea lions are members of the Otariid family (eared seals). The species, Zalophus californianus, includes three subspecies: Z. c. wolfebaeki (in the Galapagos Islands), Z. c. japonicus (in Japan, but now thought to be extinct), and Z. c. californianus (found from southern Mexico to southwestern Canada; referred to here as the California sea lion) (Carretta et al., 2007). The California sea lion is sexually dimorphic. Males may reach 1,000 lb (454 kg) and 8 ft (2.4 m) in length; females grow to 300 lb (136 kg) and 6 ft (1.8 m) in length. Their color ranges from chocolate brown in males to a lighter, golden brown in females. At around 5 years of age, males develop a bony bump on top of the skull called a sagittal crest. The crest is visible in the dog-like profile of male sea lion heads, and hair around the crest gets lighter with age.

Status – The U.S. stock of California sea lions is estimated at 238,000, with a minimum population size of 141,842 individuals (Carretta et al., 2007). The minimum population size was determined from counts of all age and sex classes that were ashore at major rookeries and haul-out sites during the 2005 breeding season, including all individuals counted during the July 2005 census at the Channel Islands in southern California and at haul-out sites located between Point Conception and the Oregon-California border. An additional unknown number of California sea

lions at any given time are at sea or hauled out at locations that are not censused; in order to estimate a total population size, pups are counted during the breeding season (because this is the only age class that is ashore in its entirety), and the number of births is estimated from the pup count. The size of the population is then estimated from the number of births and the proportion of pups in the population (Carretta et al., 2007). The stock has likely reached its carrying capacity and, even though current total human-caused mortality is unknown (due to a lack of observer coverage in the California set gillnet fishery that historically has been the largest source of human-caused mortalities), California sea lions are not considered a strategic stock under the MMPA because total human-caused mortality is still likely to be less than the potential biological removal (PBR).

Distribution – The geographic distribution of California sea lions includes a breeding range from Baja California, Mexico to southern California. During the summer, California sea lions breed on islands from the Gulf of California to the Channel Islands and seldom travel more than about 50 km from the islands (Bonnell et al., 1983). Primary rookeries are located on SNI and three other California Channel Islands (San Miguel, Santa Barbara, and San Clemente) (Le Boeuf and Bonnell, 1980; Bonnell and Dailey, 1993). Their distribution shifts to the northwest in fall and to the southeast during winter and spring, probably in response to changes in prey availability (Bonnell and Ford, 1987).

The non-breeding distribution extends from Baja California north to Alaska for males, and encompasses the waters of California and Baja California for females (Reeves et al., 2008; Maniscalco et al., 2004). In the non-breeding season, an estimated 3,000 to 5,000 adult and sub-adult males migrate northward along the coast to central and northern California, Oregon, Washington, and Vancouver Island from September to May (Jeffries et al., 2000) and return

south the following spring (Mate, 1975; Bonnell et al., 1983). Along their migration, they are occasionally sighted hundreds of miles offshore (Jefferson et al., 1993). Females and juveniles tend to stay closer to the rookeries (Bonnell et al., 1983).

California sea lions haul out at many locations on SNI and are by far the most common pinniped on the island, and are present in large numbers at SNI at all times of the year. Over the course of a year, up to 100,000 California sea lions may make use of habitat at SNI in some way. Numbers of sea lions at SNI increased by about 21 percent per year between 1983 and 1995 (NMFS, 2003) and, as numbers increased, began occupying areas that were not formerly used. As for sea lions in other locations, most adult males may disperse in autumn and winter to distant locations, primarily to the north, in order to forage.

Behavior and Ecology – California sea lions feed on a wide variety of prey, including many species of fish and squid (Everitt et al., 1981; Roffe and Mate, 1984; Antonelis et al., 1990; Lowry et al., 1991). In some locations where salmon runs exist, California sea lions also feed on returning adult and out-migrating juvenile salmonids (London, 2006). Sexual maturity occurs at around 4-5 years of age for California sea lions (Heath, 2002). California sea lions are gregarious during the breeding season and social on land during other times.

Pupping occurs on the beaches of SNI in early summer, from mid-June to mid-July. Females nurse their pups for about 8 days and then begin an alternating pattern of foraging at sea and attending and nursing the pup on land, which lasts for about 8 months, and sometimes up to a year. Time to weaning is variable and may extend to the following breeding season. The weaning process may be gradual, with pups learning to hunt and consume live prey while still nursing. Pups more than a few months of age are similar to adults in mobility, agility, and alertness to disturbances when hauled out. California sea lions also haul out at SNI during the

molting period in September, and smaller numbers of females and juveniles haul out during most of the year.

On land, California sea lions make incessant, raucous barking sounds (Schusterman et al., 1967). Males vary both the number and rhythm of their barks depending on the social context; the barks appear to control the movements and other behavior patterns of nearby conspecifics (Schusterman, 1977). Females produce barks, squeals, belches, and growls, while pups make bleating sounds. California sea lions produce two types of underwater sounds: clicks (or short-duration sound pulses) and barks (Schusterman et al., 1966, 1967; Schusterman and Baillet, 1969).

### Harbor Seal

Species Description – Harbor seals, which are members of the Phocid family (true seals), inhabit coastal and estuarine waters and shoreline areas from Baja California, Mexico to western Alaska. For management purposes, differences in mean pupping date (i.e., birthing) (Temte, 1986), movement patterns (Jeffries, 1985; Brown, 1988), pollutant loads (Calambokidis et al., 1985) and fishery interactions have led to the recognition of three separate harbor seal stocks along the west coast of the continental U.S. (Boveng, 1988). The three distinct stocks are: (1) inland waters of Washington (including Hood Canal, Puget Sound, and the Strait of Juan de Fuca out to Cape Flattery), (2) outer coast of Oregon and Washington, and (3) California (Carretta et al., 2007). The California stock is the only stock that is expected to occur within the project area.

The average weight for adult seals is about 180 lb (82 kg) and males are slightly larger than females. Male harbor seals weigh up to 245 lb (111 kg) and measure approximately 5 ft (1.5 m) in length. The basic color of harbor seals' coat is gray and mottled but highly variable, from dark with light color rings or spots to light with dark markings (NMFS, 2008c).

Status – Estimated population for the California stock of harbor seals is approximately 34,233 (Carretta et al., 2007), with a minimum population of 31,600. As for the California sea lion, a complete count of all harbor seals in California is impossible because some are always away from the haul-out sites. However, a complete pup count is also not possible because harbor seals are precocious, with pups entering the water almost immediately after birth. Population size is estimated by counting the number of seals ashore during the peak haul-out period (May to July) and by multiplying this count by the inverse of the estimated fraction of seals on land. The current population estimate is based on counts from 2004.

Counts of harbor seals in California showed a rapid increase from approximately 1972 to 1990, though net production rates appeared to decline from 1982 to 1994. The decrease in population growth rate has occurred at the same time as a decrease in human-caused mortality and may be an indication that the population is reaching its environmental carrying capacity. Harbor seals are not listed under the ESA or considered to be depleted under the MMPA. Human-caused mortality relative to PBR is unknown, but it is considered to be small relative to the stock size. Therefore, the California stock of harbor seals is not classified as a strategic stock.

Harbor seal abundance increased at SNI from the 1960s until 1981, but since then the average counts have not changed significantly. From 1982 to 1994, numbers of harbor seals have fluctuated between 139 and 700 harbor seals based on both peak ground counts and annual photographic survey photos. The most recent aerial count on SNI was of 457 harbor seals in 1994.

Distribution – Harbor seals are widely distributed in the North Atlantic and North Pacific. The California stock ranges from the U.S.-Mexico border northward to the Oregon-California border. In California, approximately 400-600 harbor seal haul-out sites are distributed along the

mainland and on offshore islands, including intertidal sandbars, rocky shores and beaches (Hanan, 1996; Lowry et al., 2005). In general, harbor seals do not undertake long migrations, but do travel 300-500 km on occasion to find food or suitable breeding areas (Herder, 1986). Harbor seals are rarely found in pelagic waters (usually found within 20 km from shore) and typically stay within the tidal and intertidal zones. Harbor seals are present at SNI during all months of the year.

Behavior and Ecology – On land, harbor seals haul out on rocky outcrops, mudflats, sandbars and sandy beaches with unrestricted access to water and with minimal human presence. Haul-out sites are important as resting sites for harbor seals, who feed opportunistically in shallow waters on fish, crustaceans, and cephalopods (Bigg, 1981; Roffe and Mate, 1984; Orr et al., 2004). Harbor seals are typically solitary while foraging, although small groups have been observed. They normally choose isolated sites for pupping. While ashore, harbor seals are typically seen in small groups resting. Harbor seals are opportunistic feeders that adjust their patterns to take advantage of locally and seasonally abundant prey (Payne and Selzer 1989; Baird 2001; Bjørge 2002). Harbor seals mate at sea and females give birth during the spring and summer, although the pupping season varies by latitude. Suckling harbor seal pups spend as much as 40 percent of their time in the water (Bowen et al., 1999).

Harbor seals haul out at various sand, cobble, and gravel beaches around SNI, where pupping occurs from late February to early April, with nursing of pups extending into May. Pups are fully weaned and independent approximately 2 months after birth. Harbor seals may also haul out during molting period in late spring, and smaller numbers haul out at other times of year.

In air, harbor seal males produce a variety of vocalizations, including snorts, grunts, and growls, while pups make individually unique calls for mother recognition (Bigg, 1981; Thomson and Richardson, 1995). Harbor seals hear nearly as well in air as underwater (Kastak and Schusterman, 1998). Adult males also produce underwater sounds during the breeding season (duration range: 0.1 s to multiple seconds; Hanggi and Schusterman 1994). Hanggi and Schusterman (1994) found that there is individual variation in the dominant frequency range of sounds between different males, and Van Parijs et al. (2003) reported oceanic, regional, population, and site-specific variation that could be vocal dialects.

### Northern Elephant Seal

Species Description – Northern elephant seals, found in the eastern Pacific Ocean, are the largest phocid in the Northern Hemisphere. Feeding grounds extend from Baja California to Vancouver Island. Males migrate as far north as Alaska and British Columbia, while females (who typically find feeding grounds further south than males) migrate as far west as Hawaii. Fully grown males can reach lengths of over 13 ft (4 m) and can weigh nearly 4,400 lb (2,000 kg). Females are significantly smaller than males, but are also quite large, growing to about 10 ft (3 m) long and weighing up to 1,300 lbs (600 kg).

Status – Populations of northern elephant seals in the U.S. and Mexico derive from tens to hundreds of individuals surviving in Mexico after being nearly hunted to extinction (Stewart et al., 1994). The California breeding population, which includes the animals that may be found at SNI, is now demographically isolated from the Baja California population, and is considered to be a separate stock, though displaying little genetic differentiation. Based on trends in pup counts, northern elephant seal colonies appeared to be increasing in California through 2005, but appear to be stable or slowly decreasing in Mexico (Stewart et al., 1994). As for other pinnipeds,

a complete population count of elephant seals is not possible because all age classes are not ashore at the same time. Elephant seal population size is typically estimated on the basis of pup counts; the current population estimate is made on the basis of counts from 2005. The California breeding stock is estimated at approximately 124,000 animals, with a conservative minimum population estimate of 74,913 animals. From 1965-77, the maximum population growth rate was determined to be 8.3 percent (Cooper and Stewart, 1983), but more recently has been evaluated at a maximum of 11.7 percent (Carretta et al., 2007). The northern elephant seal is not listed under the ESA and the California stock is not considered depleted or strategic under the MMPA.

Distribution – The California stock of northern elephant seals ranges from the U.S.-Mexico border northward to pelagic habitats off Alaska, with two annual round-trip migrations per year between breeding locations and foraging locations. Foraging locations are in the pelagic North Pacific and Gulf of Alaska off Oregon, Washington, British Columbia, and Alaska, although female foraging ranges are further south (Stewart and Huber, 1993; Le Boeuf et al., 1993). The migration schedule varies by age and sex category. Although the pelagic range is very large, there are only about seven principal breeding areas, four of which are found in the U.S. Primary breeding locations for the California stock are at San Miguel Island and SNI in the Channel Islands off southern California, Año Nuevo Island off central California, and Point Piedras Blancas on the central California mainland coast.

Increasing numbers of elephant seals haul out at various sites around SNI. Based on a pup count in 1995 that found 6,575 pups, scientists estimated that over 23,000 elephant seals may use SNI in a year (NMFS, 2003). From 1988 to 1995 the pup counts on SNI increased at an average rate of 15.4 percent per year, however, the growth rate of the population as a whole seems to have declined in recent years (NMFS, 2003).



Behavior and Ecology – Northern elephant seals breed and give birth in California from December to March (Stewart et al., 1994; Stewart and Huber, 1993), before departing for foraging grounds. Gestation lasts around eleven months, with pups born in early winter from December to January and fully weaned by the end of February, departing from SNI for their first foraging trip during late winter and early spring. Adults return to land between March and August to molt, with males returning later than females. Adults return to their feeding areas again between their spring/summer molting and their winter breeding seasons. Northern elephant seals are polygamous; males establish dominance over large groups of females during the breeding season. While foraging, elephant seals feed at night in deep water, primarily on fish and cephalopods (CDFG, 2009). Elephant seals are rarely observed at sea, because they forage in pelagic habitat and are submerged 80-90 percent of the time.

Northern elephant seals are present at SNI during all months of the year. Adult males arrive at SNI in late fall to establish breeding territories. Adult females arrive on SNI in early winter. Sub-adult animals also return to SNI during the breeding season, although they do not actively participate in breeding. Breeding adults of both sexes depart breeding sites for foraging purposes in March. The timing of the second migration, related to molting, varies by age and sex. At SNI, adult males return for molting beginning in June and depart back to foraging areas in August. Adult females and juveniles return for the molt period beginning in mid-March and depart back to foraging areas in May. Finally, juveniles ranging in age from young-of-the-year to 4 years return for an extended haul-out period from September through November. This latter haul-out period is not associated either with breeding or molting.

Potential Effects of the Specified Activity on Marine Mammals

Variable numbers of California sea lions, harbor seals, and elephant seals, depending on the time of year and the specific site, typically haul out near six of the nine study sites used for abalone research, and rarely near a seventh, with breeding activity occurring at five of the nine sites. Pinnipeds likely to be affected by abalone research activity are those that are hauled out on land at or near study sites.

Incidental harassment may result if hauled out animals are disturbed by the presence of abalone researchers. Although marine mammals are never deliberately approached by abalone survey personnel, approach may be unavoidable if pinnipeds are hauled out in the immediate vicinity of the permanent abalone study plots. Disturbance may result in reactions ranging from an animal simply becoming alert to the presence of researchers (e.g., turning the head, assuming a more upright posture) to flushing from the haul-out site into the water. NMFS does not consider the lesser reactions to constitute behavioral harassment, or Level B harassment takes, but rather assumes that pinnipeds that move greater than 1 m (3.3 ft) or change the speed or direction of their movement in response to the presence of researchers are behaviorally harassed, and thus subject to Level B taking. Animals that respond to the presence of researchers by becoming alert, but do not move or change the nature of locomotion as described, are not considered to have been subject to behavioral harassment.

Typically, even those reactions constituting Level B harassment would result at most in temporary, short-term disturbance. In any given study season (i.e., October to March), the researchers will make 4-6 visits to SNI, although each site is not visited during every visit to SNI. Visits to each site are thus separated by a matter of weeks, within the season, and are typically not visited at all during the summer months. Each site visit typically lasts no more than 4 hours. Therefore, disturbance of pinnipeds resulting from the presence of researchers lasts only

for short periods of time and is separated by significant amounts of time in which no disturbance occurs. Because such disturbance is sporadic, rather than chronic, and of low intensity, individual marine mammals are unlikely to incur any detrimental impacts to vital rates or ability to forage and, thus, loss of fitness. Correspondingly, even local populations, much less the overall stocks of animals, are extremely unlikely to accrue any significantly detrimental impacts.

There are three ways in which disturbance, as described previously, could result in more than Level B harassment of marine mammals. All three are most likely to be consequences of stampeding, a potentially dangerous occurrence in which large numbers of animals succumb to mass panic and rush away from a stimulus and an occurrence that is not expected at SNI. The three situations are (1) falling when entering the water at high-relief locations; (2) extended separation of mothers and pups; and (3) crushing of elephant seal pups by large males during a stampede.

Because hauled-out animals may move towards the water when disturbed, there is the risk of injury if animals stampede towards shorelines with precipitous relief (e.g., cliffs). However, while cliffs do exist at SNI, shoreline habitats near the abalone study sites are gently sloping sandy beaches or horizontal sandstone platforms with unimpeded and non-hazardous access to the water. If disturbed, hauled-out animals in these situations may move toward the water without risk of encountering significant hazards. In these circumstances, the risk of injury, serious injury, or death to hauled-out animals is very low. Thus, abalone research activity poses no risk that disturbed animals may fall and be injured or killed as a result of disturbance at high-relief locations.

The risk of marine mammal injury, serious injury, or mortality associated with abalone research increases somewhat if disturbances occur during breeding season. These situations

present increased potential for mothers and dependent pups to become separated and, if separated pairs do not quickly reunite, the risk of mortality to pups (through starvation) may increase. Separately, adult male elephant seals may trample elephant seal pups if disturbed, which could potentially result in the injury, serious injury, or mortality of the pups. The risk of either of these situations is greater in the event of a stampede.

However, because under the terms of this proposed IHA researchers would not visit SNI during the breeding, pupping, and lactation periods for California sea lions and harbor seals, the former scenario is extremely unlikely. The most sensitive months (with regard to breeding and pupping) for California sea lions and harbor seals are generally May through August; VanBlaricom does not propose to visit SNI outside of October-February. Relevant to the latter scenario, the most sensitive months for northern elephant seals are generally December through March. However, though elephant seal pups are occasionally present when researchers visit abalone survey sites, risk of pup mortalities is very low because elephant seals are far less reactive to researcher presence than the other two species. Less than 1 percent of adult elephant seals present during research visits between December 2005-January 2009 were recorded as having been harassed, while, no juvenile elephant seals were recorded as having been harassed (i.e., becoming alert and moving at least one meter, including flushing into the water). Further, pups are typically found on sand beaches, while study sites are located in the rocky intertidal zone, meaning that there is typically a buffer between researchers and pups. Finally, the caution used by researchers in approaching sites generally precludes the possibility of behavior, such as stampeding, that could result in extended separation of mothers and dependent pups or trampling of elephant seal pups.

In summary, NMFS believes it highly unlikely that the proposed activities would result in the injury, serious injury, or mortality of pinnipeds (and none have been recorded in the more than 30 years that VanBlaricom has been conducting this research), because (1) study sites are located in areas with gently sloping terrain; (2) the timing of research visits would preclude separation of mothers and pups for sea lions and harbor seals; and (3) elephant seals are generally not susceptible to disturbance as a result of researchers' presence. In addition, researchers exercise appropriate caution approaching sites, especially when elephant seal pups are present.

#### Anticipated Effects on Habitat

NMFS does not anticipate any detrimental effects to marine mammal habitat as a result of the proposed activities, beyond rendering the areas immediately around each of the nine study sites less desirable as haul-out sites for a matter of hours per year.

#### Summary of Previous Monitoring

VanBlaricom has complied with the mitigation and monitoring required under previous authorizations. During the course of these activities, VanBlaricom has not exceeded the take levels authorized. Beginning with the first IHA issued to VanBlaricom, reporting included the numbers of animals of a given species present and the total number of those animals disturbed. Beginning in December 2005, disturbance reactions were further categorized into the number of animals that flush into the water; the number that move more than 1 m (3.3 ft), but do not flush into the water; and the number that increase alertness but do not move greater than 1 m (see the application for these numbers in detail). As discussed previously in this document, the latter category – animals that become alert but do not move – are not considered by NMFS as having been incidentally taken (i.e., subject to Level B harassment), pursuant to the MMPA. For the

purposes of estimating take, NMFS considers the total of the two former categories of disturbance reactions only. The results of VanBlaricom's monitoring under previous IHAs are summarized in Table 1, which shows the mean and maximum numbers of each species present during visits to VanBlaricom's survey sites. Information is only presented for those research visits that occurred during months of October through February, as no visits are currently proposed outside those months.

Table 1. Results of pinniped monitoring, October 2003-January 2009.

Site	# visits	California sea lion		Harbor seal		Elephant seal	
		Animals (mean)	Animals (max)	Animals (mean)	Animals (max)	Animals (mean)	Animals (max)
1	11	54	88	0	0	2	6
2	18	0	0	0	0	0	0
3	23	0	0	0	0	0	0
4	11	11	116	0	0	0	0
5	9	60	118	24	36	53	88
6	8	224	401	26	53	195	291
7	9	357	610	5	10	60	131
8	14	183	390	0	0	7	14
9	12	1	11	0	0	6	19

Numbers are presented as mean per visit and maximum observed in any visit, October-February.

Beginning in January 2007, VanBlaricom began recording numbers of adults and pups/juveniles, rather than simply numbers of total animals. Table 2 displays the proportion of juveniles found at each permanent study site from October-February. No juvenile harbor seals have been observed by the researchers. During those months, no marine mammals of any species have been observed at sites 2 and 3, and only non-breeding animals (i.e., adult and subadult males; no dependent juveniles) have been observed at sites 4 and 9.

Table 2. Proportion of juveniles observed at each site, January 2007-January 2009.

Site	1	2	3	4	5	6	7	8	9
California sea lion	0.12	n/a	n/a	0.0	0.07	0.11	0.17	0.02	0.0
Elephant seal	0.0	n/a	n/a	n/a	0.26	0.20	0.60	0.27	0.0

Data presented for October-February only. No juvenile harbor seals observed. No marine mammals observed at sites 2 and 3; no elephant seals observed at site 4. Only non-breeding animals observed at sites 4 and 9.

As shown in Table 3, the three species that may be encountered responded to researcher presence with different degrees of sensitivity. For California sea lions, 55 percent of animals encountered showed reactions indicating behavioral harassment, while 73 percent of harbor seals were behaviorally harassed. In contrast, less than 1 percent of elephant seals encountered responded in ways indicating behavioral harassment. Similarly, the three species differed in the degree of intensity of their reactions to researcher presence. Of animals that responded to disturbance in a manner that NMFS considers to be harassment (i.e., either flushed into the water or moved greater than 1 m), only 9 percent of disturbed elephant seals flushed into the water, while 38 percent of disturbed California sea lions responded in such a fashion. The most sensitive species is the harbor seal, with 94 percent of harassed animals flushing into the water. The remainder of animals harassed (i.e., 6 percent of harassed harbor seals) responded to a lesser degree by moving some distance (greater than 1 m) on land when the researchers approached. Importantly, juveniles display a significantly lesser incidence of overall harassment and of flushing.

Although the researchers have typically not remained on-site to monitor pinniped return after flushing, as rapid departure minimizes harassment of the animals, increasing numbers at certain sites as well as pinniped presence at sites where they were not present in past years suggest that the disturbance is not having any long-term detrimental effects on the population of any of these three species.

Table 2. Sensitivity of animals to encounters with researchers and intensity of reaction, by species.

Species	% taken <sup>1</sup>			% flush <sup>2</sup>		
	Total	Adult	Juvenile	Total	Adult	Juvenile
California sea lion	54.8	56.4	30.8	38.3	40.8	4.5
Harbor seal <sup>3</sup>	73.2	73.2	n/a	94.0	94.0	n/a
Elephant seal <sup>4</sup>	0.6	0.9	0.0	9.1	9.1	n/a

Totals reflect information collected December 2005-January 2009; adult-juvenile breakdown from January 2007-January 2009.

<sup>1</sup> Percent taken is the percentage of animals encountered that either flushed into the water or moved greater than 1 m.

<sup>2</sup> Percent flush is the percentage of animals taken that flushed into the water.

<sup>3</sup> No juvenile harbor seals were encountered.

<sup>4</sup> No juvenile elephant seals were reported as taken.

## Proposed Mitigation

In order to issue an incidental take authorization (ITA) under section 101(a)(5)(D) of the MMPA, NMFS must, where applicable, set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (where relevant).

Several mitigation measures are proposed to be implemented as part of the SNI abalone research activities in order to reduce the potential for harassment. The primary method of mitigating the risk of disturbance to pinnipeds, which will be in use at all times, is the selection of judicious routes of approach to abalone study sites, avoiding close contact with pinnipeds hauled out on shore, and the use of extreme caution upon approach. In no case will marine mammals be deliberately approached by abalone survey personnel, and in all cases every possible measure will be taken to select a pathway of approach to study sites that minimizes the number of marine mammals potentially harassed. Each visit to a given study site will last for approximately 4 hours, after which the site is vacated and can be re-occupied by any marine mammals that may have been disturbed by the presence of abalone researchers.

In addition, potential disturbances to females with dependent pups (in the cases of California sea lions and harbor seals) will be mitigated to the greatest extent practicable by avoiding visits to sites with pinnipeds present from March-September, during periods of breeding and lactation for those species. During this period, abalone research would either not occur or would be confined to those sites (2, 3, 4, and 9) where pinniped breeding and post-



partum nursing does not occur. Limiting visits to the breeding and lactation sites to periods when these activities do not occur (October-February) will reduce the possibility of incidental harassment and disruption of reproductive behavior and the potential for injury, serious injury, or mortality of dependent California sea lion pups and harbor seal pups to near zero.

Northern elephant seal pups are present at four sites (5-8) during winter months. Risks of injury or mortality of elephant seal pups by mother/pup separation or trampling are limited to the period from January through March when pups are born, nursed, and weaned, ending about 30 days post-weaning when pups depart land for foraging areas at sea. However, elephant seals have a much higher tolerance of nearby human activity than sea lions or harbor seals. Also, elephant seal pupping typically occurs on the sandy beaches at SNI, approximately 50 m (164 ft) or more away from the abalone study sites. Possible take of northern elephant seal pups will be minimized, as for other species, by using a very careful approach to the study sites and avoiding the proximity of hauled-out seals and any seal pups during collection of abalone population data. As described previously, elephant seals show very low sensitivity to the presence of researchers, and no juvenile elephant seal was harassed during the December 2005-Januray 2009 period.

One individual Guadalupe fur seal was seen on two separate occasions during the summer months in the mid-1980s. Since the original sightings, no individuals of this species have been seen during abalone research. However, to ensure that Guadalupe fur seals are not affected by these activities, work will be immediately suspended if an individual is seen. Guadalupe fur seals are distinctive in appearance and behavior, and can be readily identified at a distance without any possibility of disturbance.

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means

of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: (1) the manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals; (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and (3) the practicability of the measure for applicant implementation, including consideration of personnel safety, and practicality of implementation.

Based on our evaluation of the applicant's proposed measures, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

#### Proposed Monitoring and Reporting

In order to issue an ITA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must, where applicable, set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that would result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

Currently, all biological research activities at SNI are subject to approval and regulation by the Environmental Planning and Management Department (EPMD), U.S. Navy (Navy). The Navy owns SNI and closely regulates all civilian access to, and activity on, the island, including

biological research. Therefore, monitoring activities will be closely coordinated with Navy marine mammal biologists located on SNI.

In addition, status and trends of pinniped aggregations at SNI are monitored by the NMFS Southwest Fisheries Science Center (SWFSC). Also, long-term studies of pinniped population dynamics, migratory and foraging behavior, and foraging ecology at SNI are conducted by staff at Hubbs-Sea World Research Institute (HSWRI).

Proposed monitoring requirements in relation to VanBlaricom's abalone research surveys will include observations made by the applicant and his associates. Information recorded will include species counts (with numbers of pups/juveniles), numbers of observed disturbances, and descriptions of the disturbance behaviors during the abalone surveys. Observations of unusual behaviors, numbers, or distributions of pinnipeds on SNI will be reported to EPMD, NMFS, and HSWRI so that any potential follow-up observations can be conducted by the appropriate personnel. In addition, observations of tag-bearing pinniped carcasses as well as any rare or unusual species of marine mammals will be reported to EPMD and NMFS.

If at any time serious injury or mortality of the species for which take is authorized should occur, or if harassment of any other marine mammal occurs, and such action may be a result of the proposed abalone research, VanBlaricom will suspend research activities and contact NMFS immediately to determine how best to proceed to ensure that another injury or death does not occur and to ensure that the applicant remains in compliance with the MMPA.

A draft final report must be submitted to NMFS Office of Protected Resources within 60 days after the conclusion of the year-long field season or 60 days prior to the start of the next field season if a new IHA will be requested. The report will include a summary of the information gathered pursuant to the monitoring requirements set forth in the IHA. A final

report must be submitted to the Regional Administrator within 30 days after receiving comments from NMFS on the draft final report. If no comments are received from NMFS, the draft final report will be considered to be the final report.

#### Estimated Take by Incidental Harassment

With respect to the activities described here, the MMPA defines "harassment" as:

any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

All anticipated takes would be by Level B harassment, involving temporary changes in behavior. The proposed mitigation and monitoring measures are expected to minimize the possibility of injurious or lethal takes such that take by injury, serious injury, or mortality is considered remote. The distribution of pinnipeds hauled out on beaches is not uniform between sites or at different times of the year. The number of marine mammals disturbed may vary by month and location, and, compared to animals hauled out on the beach farther away from survey activity, only those animals hauled out closest to the actual survey transect plots contained within each research site are likely to be disturbed by the presence of researchers and alter their behavior or attempt to move out of the way. VanBlaricom proposes to visit site 8 five times, sites 5 and 7 four times each, and sites 1, 4, 6, and 9 two times each. No marine mammals have been observed at sites 2 and 3, and unlimited visits would be allowed to those sites.

As discussed earlier, NMFS considers an animal to have been harassed if it moved greater than 1 m (3.3 ft) in response to the researcher's presence or if the animal was already moving and changed direction and/or speed, or if the animal flushed into the water. Animals that became alert without such movements were not considered harassed. Estimated potential incidental take, shown in Table 4, is based on the number of visits proposed for each site, the

maximum number of animals observed at each site (October-February) as shown in Table 1, and the observed susceptibility to harassment for each species as shown in Table 3. NMFS conservatively estimates that the maximum total possible numbers of individuals that may be incidentally harassed as a result of the proposed activity would be 3,340 California sea lions, 212 harbor seals, and nine northern elephant seals.

#### Negligible Impact and Small Numbers Analysis and Preliminary Determination

NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival." In making a negligible impact determination, NMFS considers a variety of factors, including but not limited to: (1) the number of anticipated mortalities; (2) the number and nature of anticipated injuries; (3) the number, nature, intensity, and duration of Level B harassment; and (4) the context in which the take occurs.

Based on VanBlaricom's application and monitoring reports for previous field seasons, as well as the analysis contained herein, NMFS has preliminarily determined that the impact of the described abalone research at SNI will result, at most, in a temporary modification in behavior by small numbers of California sea lions, harbor seals, and northern elephant seals, in the form of movement away from the researchers and/or flushing from the beach. The proposed numbers of authorized take for each of the three species are considered small relative to the relevant stocks or populations (each less than 2 percent). In addition, no take by injury, serious injury or mortality is anticipated, and take by harassment will be at the lowest level practicable due to incorporation of the mitigation and monitoring measures mentioned previously in this document.

NMFS has preliminarily determined that the anticipated takes will have a negligible impact on the affected species.

#### Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses

No subsistence uses of marine mammals are implicated by this action.

#### Endangered Species Act (ESA)

For the reasons described previously in this document, NMFS has determined that the described abalone research and the accompanying IHA will have no effect on marine mammal species or critical habitat protected under the ESA (specifically, the Guadalupe fur seal).

Therefore, marine mammals under NMFS jurisdiction would not be affected by this action.

#### National Environmental Policy Act (NEPA)

In compliance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), as implemented by the regulations published by the Council on Environmental Quality (40 CFR parts 1500-1508), and NOAA Administrative Order 216-6, NMFS prepared an Environmental Assessment (EA) to consider the direct, indirect and cumulative effects to the human environment resulting from issuance of an IHA to VanBlaricom. NMFS signed a Finding of No Significant Impact on November 21, 2005. NMFS has reviewed the proposed application and preliminarily determined that there are no substantial changes to the proposed action or new environmental impacts or concerns. Therefore, NMFS has determined that a new or supplemental EA or Environmental Impact Statement is likely unnecessary. Before making a final determination in this regard and decision on whether or not to issue a Finding of No Significant Impact for this proposed action, NMFS will review public comments and information submitted by the public and others in response to this notice. The 2005 EA referenced above is available for review at <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>.

## Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to authorize the take of marine mammals incidental to VanBlaricom's research activities, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: February 23, 2012.

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James H. Lecky,  
Director,  
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